

PATENT SPECIFICATION

633,194



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PROVISIONAL SPECIFICATION

Improvements Connected with Devices for the Removal of Plaster Casts and Bandages

I, ERNEST GORDON GREVILLE, a British Subject, of 167—173, Gray's Inn Road, London, W.C.1, do hereby declare the nature of this invention to be as follows:—

This invention relates to devices intended for the removal of plaster casts or bandages, although serving the purpose also of a bone punch; and while the invention is intended more particularly for application to hand-operated devices for such purposes, it is applicable also to motor driven devices.

The invention has reference to a device for the above purposes of the character described in my Specification No. 550,463.

In the device described in that specification, a cutting tool or cutter punch is employed which is constructed to present a channeled section at the cutting end facing a tool guide on which the tool reciprocates, and a channel section at the opposite end facing away from the tool guide, an intervening opening or slot being formed between the oppositely directed channels which are intended to provide for delivery through the tool and away of cuttings or pellets and debris.

In practice, it is found that the cuttings or pellets and debris are liable to become closely packed or jammed in the tool, and not infrequently this results in bursting or fracture of the tool.

An object of the present invention is to remove this defect.

According to the present invention, a device of the character described in my Specification No. 550,463 for the removal of plaster casts or bandages and serving also as a bone punch, is provided with means for ejecting the cuttings or pellets and debris from the tool.

The device can be hand operated or power operated.

In one example, a plaster cast or band-

age removing device is provided which is constructed as described in Specification No. 550,463 with a cutting tool or cutter punch of channeled character supported for reciprocation over a fixed foot or anvil and guided in its reciprocatory movements by a slotted guide plate, the forward edge of which is overlapped by the side flanges or cheeks of the tool.

In order to prevent packing or jamming of cuttings or pellets and debris in the tool, a projection is provided on the forward edge of the guide plate, said projection entering the channel of the tool.

The position of the projection is such that when the tool reaches the end of its idle stroke, i.e. the end of its sliding movement in the direction away from the foot or anvil, the projection will lie between the cutting edges of the tool.

Thus, as the tool performs its idle stroke away from the foot or anvil, cuttings or pellets and debris that enter the tool during the cutting stroke are ejected from or pushed out of the tool by the projection, which forms virtually an ejector or fixed piston.

The projection may be of any convenient shape, for instance, triangular.

It may be formed, however, by broadening the upper part of the guide plate, so that this broader part enters into the tool channel and presents a shoulder located within the tool channel to effect ejection of cuttings or pellets and debris on the idle or upward stroke of the tool relatively to the shoulder.

The projection may be separate from the guide plate and may then be spring-loaded.

Alternatively, or additionally, a spring-loaded ejector may be mounted on the guide plate or on any other convenient fixed part of the device to eject cuttings or pellets and debris in a lateral

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direction, the spring being automatically set and released as the tool reciprocates.

Dated this 15th day of September, 1947.
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COMPLETE SPECIFICATION

Improvements Connected with Devices for the Removal of Plaster Casts and Bandages.

I, **ERNEST GORDON GREVILLE**, a British Subject, of 167—173, Gray's Inn Road, London, W.C.1, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

10 The invention relates to devices intended for the removal of plaster casts and bandages, although also serving as a bone punch, and while the invention is intended more particularly for application to hand operated devices for such purposes, it is applicable also to motor driven devices.

The invention is particularly concerned with devices for the above purposes, for example, as described in Specification No. 550,463, which comprise a cutting tool of channeled section reciprocated on a tool guide so as to co-operate with an anvil at the foot of the guide which may have an inclined face to direct cuttings into a discharge opening in the cutting tool above the cutting edge.

The object of the invention is to ensure that any cuttings or pellets and debris which may be carried up by the cutting tool as it recedes from the anvil will be positively forced out of the tool.

According to the invention, a device for removing plaster casts and bandages and serving also as a bone punch, comprising a cutting tool of channeled section reciprocated on a guide to co-operate with an anvil at the foot of the guide, is provided with an ejector on the tool guide in such a position that the cutting tool can slide over it, and when the cutting tool recedes from the anvil and slides over the ejector, any cuttings, pellets or debris which may be carried up inside the tool engage with the ejector and are forcibly ejected by it from the tool.

In the accompanying drawings:—

Figure 1 is a side elevation partly in section of one example of a device according to the invention.

Figure 2 is a sectional end view on the line II—II, Figure 1.

Figure 3 is a side elevation showing the cutting tool in section to expose the

ejector.

Figure 4 is a side elevation showing the cutting tool in the raised position.

Figure 5 is a side elevation partly in section illustrating an alternative form of ejector.

The example illustrated in these drawings is similar to that described in specification No. 550,463 comprising a channeled cutting tool 5 reciprocated on a guide plate 19, relatively to an anvil 20, by means of a hand lever 2 which is pivotally mounted on a bush 8 on a fulcrum pin 7 fitted in a casing 3. The lever 2 is connected by links 9 to the tool holder 4.

A hand lever 1 is bolted to side cheeks 18 of the casing 3.

The cutting tool is of channeled section having lugs 28 connected by a pin to a guide block 29 sliding in a guide slot 21 having cutting edges 30, 31, co-operating with cutting edges on the block 29. The anvil 20 has a projection 32 conforming in contour to that of the cutting edge of the tool 5 to permit of a shearing or nibbling action on the plaster cast or bandage. The projection 32 is inclined to direct chippings outwardly through an opening 25 in the tool 5 during cutting and to direct outwardly any chippings which may fall from the open end of the tool when raised. The tool has an inclined or wedge shaped part 27.

In order to prevent packing or jamming of cuttings in the tool 5 a projection 35 is provided on the forward edge of the tool guide plate 19 in such a position that when the tool slides over it and approaches the end of its idle stroke the projection will forcibly eject any cuttings or chippings which may have been carried up inside the tool.

The projection or ejector 35 is shown of triangular form that is with an inclined rear edge 36 which will co-operate with the wedge shaped part 27 so as to loosen and eject through the opening 25 any small chippings which may escape past the ejector 35 and tend to accumulate in the tool.

Alternatively the projection or ejector

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- 35 may be separate from the guide plate 12 and may be provided with a spring 37, Figure 5, which is stressed by the ejector abutting against the plaster on the down stroke of the tool so that it recedes into the tool during the cutting operation, the spring 37 thrusting it out of the tool to eject the chippings as the tool is raised.
- 10 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—
- 15 1. A device for removing plaster casts and bandages and serving also as a bone punch, comprising a cutting tool of channeled section reciprocated on a guide to co-operate with an anvil at the foot of the guide, and wherein an ejector is provided on the tool guide in such a position that the cutting tool can slide over it, and when the cutting tool recedes from the anvil and slides over the ejector, any cuttings, pellets or debris which may be carried up inside the tool engage with the ejector and are forcibly ejected by it from the tool.
2. A device according to claim 1 having an ejector formed by a stationary projection on the guide on which the tool is reciprocated, substantially as hereinbefore described with reference to Figures 1 to 4 of the accompanying drawings.
3. A device according to claim 1 having an ejector which is movable relatively to the tool and guide, and provided with a spring substantially as hereinbefore described with reference to Figure 5 of the accompanying drawings.
- Dated this 15th day of October, 1948.
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